

# The Economics of Globalization

## Policy Perspectives from Public Economics

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PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE  
The Pitt Building, Trumpington Street, Cambridge, United Kingdom

CAMBRIDGE UNIVERSITY PRESS

The Edinburgh Building, Cambridge CB2 2RU, UK

<http://www.cup.cam.ac.uk>

40 West 20th Street, New York, NY 10011-4211, USA <http://www.cup.org>

10 Stamford Road, Oakleigh, Melbourne 3166, Australia

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First published 1999

Printed in the United States of America

Typeset in Times Roman 10/12 pt, Quark XPress™[BTS]

*A catalog record for this book is available from  
the British Library.*

*Library of Congress Cataloging-in-Publication Data*

The economics of globalization: policy perspectives from public  
economics / edited by Assaf Razin, Efraim Sadka.

p. cm.

ISBN 0-521-62268-9 (hb)

1. Finance, Public – Congresses. 2. Competition, International –  
Congresses. 3. International economic relations – Congresses.

I. Razin, Assaf. II. Sadka, Efraim.

HJ113.E347 1999

336 – dc21

97-52781

CIP

ISBN 0 521 62268 9 hardback

## **International Implications of German Unification**

by Hans-Werner Sinn

published in:

A. Razin and E. Sadka (Eds.):

“The Economics of Globalization”,

Cambridge University Press: Cambridge 1999, pp. 33-58.

## **International Implications of German Unification**

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*Hans-Werner Sinn*

### **1 Introduction**

The unification of Germany has not been solely an internal affair; it has accelerated the unification of Europe as a whole, and its economic consequences have severely affected the rest of Europe, if not the rest of the world. The acceleration of European unification has occurred because of the widely held belief that only a tight integration of Germany into the European Community would make it possible to control and influence the economic power center thought to have been created by German unification. Nicholas Ridley, the British secretary of commerce, who had publicly expressed the opposite view that European integration was a German trick aimed at controlling the rest of Europe, had to resign immediately after making his statement. The official policy of Europe's governments was for, not against, tighter integration of Germany.

The unification of Germany has also had a very direct effect on the Maastricht treaty. When Chancellor Kohl and President Mitterand announced in early 1990 that there would be a government conference in Maastricht, Mitterand also promised his support for the unification of Germany. That was a surprising step, given that in late 1989 Mitterand had tried his utmost to prevent that unification. He had tried hard to stabilize the East German regime and to persuade Gorbachev to veto the unification, but without success. It is an open secret that

This study was prepared for the 52nd Congress of the International Institute of Public Finance in Tel Aviv, Israel, August 26–29, 1996, and revised in May 1997 with the then-available data. The author gratefully acknowledges careful research assistance and useful comments by Helge Berger, Holger Feist, Ronnie Schöb, Ulrich Schalten, Claudio Thum, and Alfons Weichenrieder.

Germany had to buy the consent of France by sacrificing the deutsche mark (DM).

Ironically, the ease with which the unification of Germany has swept away the political barriers to a European currency union contrasts sharply with the economic obstacles that unification may have created for such a union. The economic unification of Germany probably has been the greatest shock to the world economy since Reagan's tax reform in 1981. Germany has been soaking up resources from all over the world to feed the eastern Germans, who are still a long way from earning their own living, and as a result the exchange-rate volatility has been substantial.

This study describes how Germany and its trading partners were affected by these events, compares the German-unification shock with the shock created by Reagan's policies, and analyzes the impacts of the German-unification shock on interest rates, exchange rates, and the performance of the European monetary system (EMS). An attempt is made, focusing on considerations of purchasing-power parity, to determine which currencies have survived the German-unification shock in sufficiently good condition for them to enter into a currency union, as contrasted with those currencies that need to be realigned before entering. Arguably, the question whether or not the exchange rates between the deutsche mark and other currencies are in line with purchasing-power parities is more important for the decision about creating a monetary union than are the debt criteria whose importance has been overly stressed in the public policy debate.

This study also comments on the widely held belief that a European currency union would cause problems similar to those caused by the German currency union.

Because so much has already been written about these issues of German unification, Europe, and the exchange markets, this study cannot claim full originality. The basic point, that the revaluation of the deutsche mark was caused by German unification, has been made by various authors,<sup>1</sup> and there have even been allusions to Reagan's tax reforms in this context by Branson (1993, 1994) and Sinn and Sinn (1992, pp. 44–51, esp. p. 51). However, these issues seem sufficiently important to justify a synthesis and broader analysis using the statistical information available in 1997. This is particularly so as the realization of the Maastricht treaty

<sup>1</sup> Cf., e.g., Issing (1992), Svensson (1994), or Deutsche Bundesbank, *Monatsbericht*, Mai 1996, p. 55.

approaches, and decisions about the countries joining the union will have to be made soon.

## 2 Thirsty as a Giant

Although Germany is the largest country in the European Community (EC), with one-quarter of its population, it is not a giant. Russia's population is 80% larger; Turkey will have reached Germany's population within a decade; China's population would make almost 15 Germanies. However, Germany is as thirsty as a giant, because eastern Germany absorbs far more resources than it produces.

Figure 2.1 shows the development of eastern German economic absorption since the unification occurred. The extent of absorption has more than doubled in the 6 years that have elapsed, and currently its rate is still about 50% larger than the eastern German gross domestic product (GDP). In 1996 the eastern German economy absorbed DM 235 billion more in terms of consumption, investment, and public expenditure on goods and services than it produced. About one-third of the excess absorption stemmed from private capital imports into the eastern German economy, with two-thirds being public transfers, primarily for unemployment benefits, pensions, and public infrastructure investment. The total amount of public funds pumped into the eastern German economy in the first 6 years since unification approximates DM 800 billion. This sum excludes the deficit of the Treuhandanstalt, the government-controlled resolution trust for the industries of the old *Länder*. If the Treuhand deficit is added, the total sum of public-resource transfers increases to about DM 1,000 billion.

These sums are truly large, especially if they are compared with the capital imports for other eastern countries. From 1990 through 1995, the accumulated net inflow of capital into *all* other former Comecon countries amounted to no more than DM 115 billion,<sup>2</sup> and the accumulated inflow of direct investment was only about DM 60 billion.<sup>3</sup> In 1995 the net per-capita import of resources into eastern Germany was more than

<sup>2</sup> Estimation based on European Bank for Reconstruction and Development, *Transition Report*, 1995, London, Annex 11.1, and European Bank for Reconstruction and Development, *Transition Report Update*, London, April 1996. For some smaller eastern economies the data for 1990 and 1991 are not available.

<sup>3</sup> UN/ECE, *East-West Investment News*, Summer 1996 (2). European Bank for Reconstruction and Development, *Transition Report*, 1994, London, p. 123. The foreign-direct-investment figure excludes Armenia, Azerbaijan, Georgia, Kyrgyzstan, Turkmenistan, Uzbekistan, and Tajikistan.

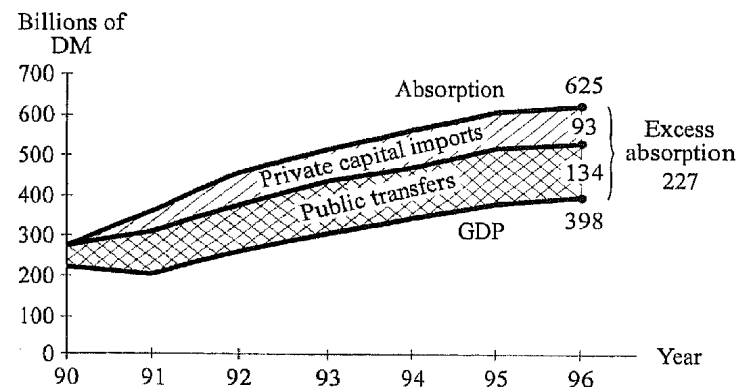


Figure 2.1. Excess absorption in the new *Länder* and its financing. The new *Länder*'s nominal GDP is augmented by net imports to calculate absorption. Net imports include not only the trade deficits with foreign countries but also those with the old *Länder* (former Federal Republic of Germany). It therefore can be interpreted as the excess absorption of the new *Länder*. Net public transfers are measured as the sum of the transfers to the new *Länder* made by central and local governments and include special subsidy programs and social insurance. The deficit of the Treuhandanstalt is not included. The transfers are measured net of taxes and fees from the new *Länder*. The residual of excess absorption and public transfers is private capital imports (and private transfers). Excess-absorption data for 1995 and 1996 are estimates. Sources: Bundesbank, *Monatsbericht*, October 1996, Frankfurt/Main, p. 19; Deutsches Institut für Wirtschaftsforschung, *DIW Wochenbericht*, 27–28/95 and 30/95, Berlin 1995, pp. 464 and 524, and additional information; Statistisches Bundesamt, *Fachserie* 18, Reihe 1.2, Konten und Standardtabellen, Vorbericht 1995, Wiesbaden, p. 76.

160 times the per-capita import of resources into all other former Eastern-bloc countries, and by 1995 direct investment per capita was about 100 times as large in eastern Germany as in the other eastern European countries.<sup>4</sup>

The public transfers that explain two-thirds of eastern Germany's

excess absorption reflect Germany's current problems. East Germans were promised the West German living standard, but the naive belief that the promise could be kept simply by raising eastern German wages to the western level has led to the virtual destruction of the eastern German manufacturing industry. Four out of five jobs that were available in manufacturing before unification have disappeared, without being replaced. Manufacturing output has declined by two-thirds and is recouping only gradually. Union wages are now basically at the western German level, but unemployment benefits, social aid, and public pensions are the expensive consequences for the German government budget.

Most of the public funds involved in such transfers have been borrowed by the German government. Chancellor Kohl had made something like President Bush's "read my lips" promise in 1990, excluding tax increases as a means of financing unification. As a consequence, there have been no major tax increases in Germany since the time of unification. On the contrary, in 1993 the so-called location-preservation law (*Standortsicherungsgesetz*) was passed, and that implied a substantial reduction of business taxes. As a result of the divergence between public expenditure and revenue, the German public debt jumped from DM 928.8 billion in 1989 to DM 1,994.5 billion by the end of 1995, and the ratio of debt to GDP has climbed from 41.8% to 57.7%. By the end of 1996 the ratio had grown to 61%, violating even the Maastricht criterion (Figure 2.2).

The public and private resources that Germany needed for its new *Länder* could, in principle, have been financed by belt tightening (i.e., with increased private savings). However, that did not happen. German households obviously knew little about Ricardian equivalence and did not react to the foreseeable future tax burden that the public borrowing was likely to necessitate (i.e., they did not curtail their consumption levels).<sup>5</sup>

So the necessary resources in fact had to come from abroad. In 1989 Germany had a current-account surplus of DM 107 billion, which was then the largest current-account surplus in the world.<sup>6</sup> As Figure 2.3 shows, with unification that situation changed rapidly. From 1991 onward

<sup>4</sup> The "net import of resources" is the current-account deficit, and direct investment is greenfield investment plus foreign acquisitions. For the purpose of this comparison, eastern Germany is treated like a separate country; i.e., the imports include those from western Germany. Sources: *DIW Wochenbericht*, 3/95, table 1; *Jahresabschluss der Treuhandanstalt*, 31 December 1994; UN/ECE, *Statistical Survey of Recent Trends in Foreign Investment in East European Countries*, November 1995, p. 72. Cf. also Sinn and Weichenrieder (1997).

<sup>5</sup> Alternatively, they may have been Ricardians with more sophisticated expectations. For example, they may have expected that the service of public debt would be financed with public-expenditure cuts, rather than tax increases, or they may have expected a future increase in the value-added tax and thus substituted away from expensive future consumption to cheap present consumption.

<sup>6</sup> One-third of that surplus (DM 36.9 billion) consisted of voluntary transfers to other countries, and two-thirds of net capital exports.

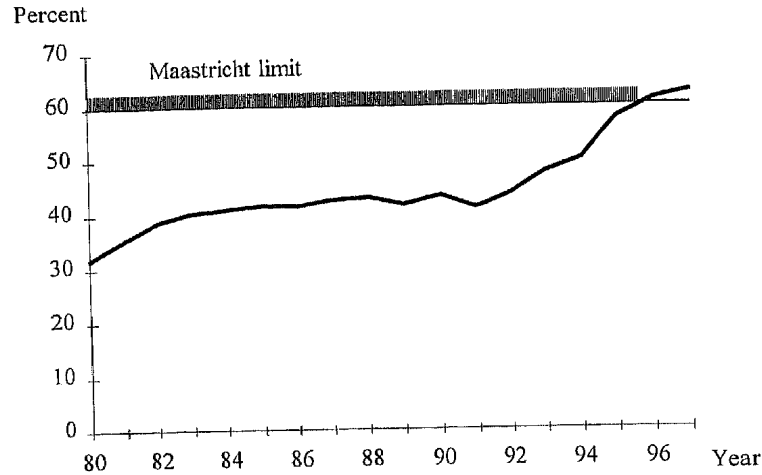


Figure 2.2. German debt-GDP ratio for Germany's public sector. Treuhand debt is included starting in 1995; 1996 and 1997 are OECD projections. Sources: Bundesbank, *Monatsberichte* (various issues), Frankfurt/Main, table "Verschuldung der öffentlichen Hand"; Statistisches Bundesamt, *Statistisches Jahrbuch* (various issues), table "Volkswirtschaftliche Gesamtrechnung"; OECD, *Economic Outlook 59*, annex of table 61.

the current account has been persistently negative, and Germany has turned into a capital-importing country. The change in the current account relative to the year 1989 was about DM 160 billion, which just happens to equal the amount of the current flow of public funds from western to eastern Germany.

The resources that Germany needed came primarily from the other EC countries, which are Germany's major trading partners. In 1991 they financed two-thirds of the current-account deficit, and in 1995 nearly all of it. Figure 2.4 illustrates the situation.

Despite being a net importer of resources, Germany has positive current accounts with some countries, in particular with the United States. In 1995, Germany's current-account surplus with the United States was about DM 17 billion. The United States, too, has been in a situation that has required a substantial amount of resource absorption, and there are in fact startling similarities to the state of affairs following German unification. To understand the situation of the United States, we need to look back to the year 1981.

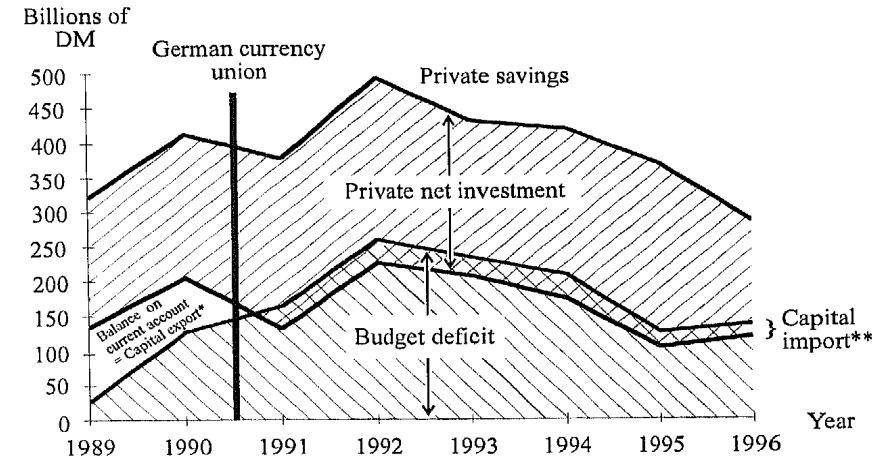


Figure 2.3. The squeeze on the current-account balance. The government budget deficit includes the borrowing for the German Unity Fund and the deficit of the GDR budget. Until 1994 the government budget deficit included the net borrowing and the sales proceeds of the Treuhandanstalt. The debt of the Treuhandanstalt was transferred to the Erblastentilgungsfonds in 1995. Thus the 1995 figure includes the change in the net debt of the Erblastentilgungsfonds. Sources: Bundesbank, *Monatsberichte* (various issues), Frankfurt/Main; Statistisches Bundesamt, *Volkswirtschaftliche Gesamtrechnung*, Fachserie 18, Reihe 3; Deutsches Institut für Wirtschaftsforschung, *DIW Wochenbericht*, 46/91, 34/92, 46/94, 7/96, Berlin; Treuhandanstalt, various press releases; information from Bundesanstalt für vereinigungsbedingte Sonderaufgaben of July 19, 1996.

### 3 Reagan's Tax Reforms: A Historically Similar Experiment

In 1981, President Reagan persuaded the U.S. Congress to pass a tax-reform package that may well have been the most radical in U.S. history. Despite the occasional hope for a Laffer-curve effect, the tax cuts associated with that reform brought about a rapid increase in the U.S. federal budget deficit that, over a period of 5 years, was estimated to amount to some \$160 billion (Sinn, 1984).

Even more important than the budget effects may have been the incentive effects of the so-called accelerated cost-recovery system (ACRS), which was the most important part of the reform package. The ACRS implied a dramatic shortening of the write-off periods for invest-

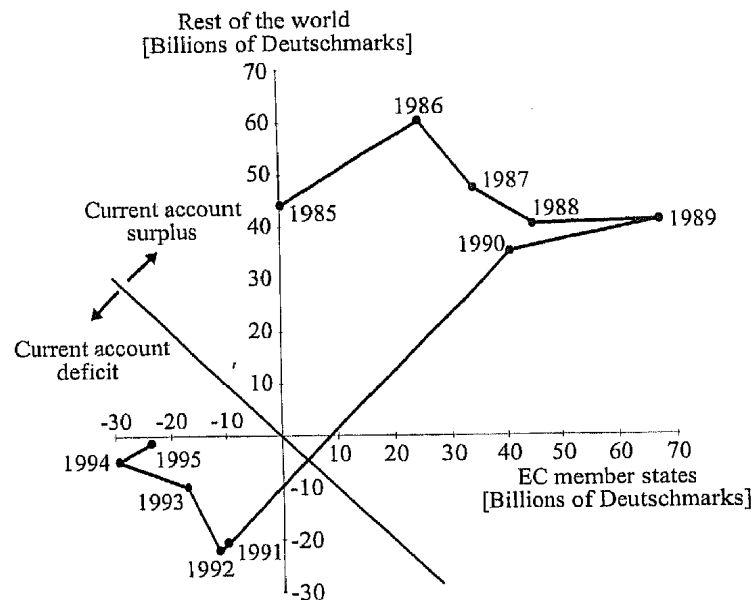


Figure 2.4. Germany's current account, the EC, and the rest of the world. The graph shows Germany's current-account surplus against all states that joined the EC up to the end of 1994 and against all other countries. The sum of the balances defines Germany's whole current-account surplus. The downward-sloping curve through the origin has a slope of  $-1$ . Points on this curve are characterized by a German current-account surplus of zero. Source: Bundesbank, *Zahlungsbilanzstatistik*, table "Leistungsbilanz nach Ländern und Ländergruppen," various volumes, Frankfurt/Main.

ment projects and provided a massive investment stimulus. Combined with the investment tax credit, the stimulus was approximately equal to an immediate write-off. With tax rates in the neighborhood of 50%, as they were at the time, the switch from economic depreciation to an immediate write-off implied that investment projects could survive a doubling of the rate of interest without becoming unprofitable. In other words, the investment demand curve was shifted upward to twice its original level. The reform actually carried out did not quite have such a dramatic effect, because some acceleration of tax depreciation had previously been allowed. Nevertheless, it is estimated (Sinn, 1984) that the long-run cumulative effect of the ACRS on U.S. capital imports was about \$1,000–1,500 billion. Reagan's tax reforms of 1981 have partly

been reversed by the subsequent reforms of 1986, but they have had long-lasting effects on the trade relationships between the United States and the rest of the world.<sup>7</sup>

U.S. interest rates rose sharply after the recession of 1982 and reached a historical peak in 1994. The implication was that the dollar became a very attractive investment currency and climbed to a peak value of DM 3.45 in February 1985. The U.S. current account, which before the 1981 reform had been balanced, turned strongly negative. In the first 5 years after the reform, the accumulated capital import of the United States was \$390 billion more than in the 5 years before the reform, and by the end of 1995 it had increased to \$1,320 billion, about what had been predicted.

Undoubtedly, the 1981 U.S. tax reform was a major shock to the world economy, and the shock waves were felt everywhere. Whereas foreign exporters were happy about the business they could do with a high value of the dollar, debtors all over the world were running into problems because they had to pay higher interest rates. In Europe, the construction industries collapsed, and in all likelihood even the world debt crisis was triggered off by the rising interest rates.<sup>8</sup>

The resource demand that the German unification produced for the world economy was not very different from that created by Reagan's tax reforms. Despite the fact that the two events had their own idiosyncratic causes, the common elements were the sharp increase in the public budget deficit and a special stimulus for private investment. In the United States, that stimulus came from the ACRS; in Germany it came from the new investment opportunities in the new *Länder*.

Surprisingly, even the magnitudes of the resource demands for the two events were rather similar. In the first 5 years after German unification, the accumulated effect on the German current account amounted to a differential capital import of \$338 billion relative to the 5 years before unification. This amount is of the same order of magnitude as the \$390 billion that is the measure of the accumulated impact of Reagan's reforms in the 5 years after 1981. Figure 2.5 illustrates the striking similarity in the magnitudes of U.S. and German capital imports following the two different historical events.

<sup>7</sup> A comparison of the 1981 and 1986 reforms has been published (Sinn, 1988).

<sup>8</sup> During the 1970s, the developing countries had been able to borrow at negative real rates of interest. After the U.S. tax reform, the real rates jumped by 5 percentage points to a level of about 4% which many developing countries were unable to bear. Starting with Mexico in 1982, many of them declared their inability to service their debts. See Sinn (1993) for details.

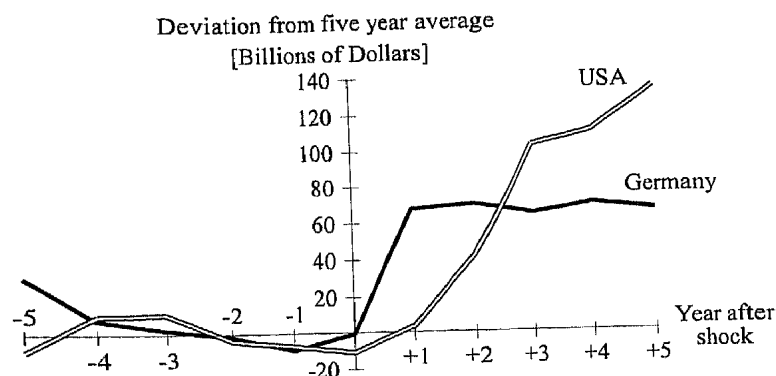


Figure 2.5. Net resource imports following two shocks: Reagan's tax reforms and German unification. The additional net resource import after the shock has been calculated from current-account data. The curves have been adjusted so that the average in the 5 years before the shock is zero. In the United States, the shock was in 1981; in Germany, the shock was in 1990. Sources: OECD, *Main Economic Indicators: Historical Statistics, 1969-1988*, 1990, p. 91; OECD, *Economic Outlook*, July 1996, pp. A40 and A53.

#### 4 The Revaluation of the Deutsche Mark and the European Currency Crisis

The unification of Germany, too, was a shock, and it likewise produced a crisis – not a world debt crisis, but a crisis for the EMS. The high public and private demands for capital increased German interest rates relative to those in other countries, increased the deutsche mark's attractiveness as an investment currency, and created strong appreciation pressure. Initially, the EMS prevented the deutsche mark from appreciating after unification. Despite the Bundesbank's offer to revalue the deutsche mark within the system, a political decision was made to defend the existing exchange rates. However, the EMS was only temporarily able to prevent the flood of capital that had been attracted. Economic forces were stronger than political will. Only 2 years after unification, the EMS broke down, and the deutsche mark became free to revalue.

The following figures show what happened. Figure 2.6 shows the development of the German interest rates and those in the other EMS countries. Before unification, there had been persistent interest differentials between Germany and the other EMS countries of 400 base points and more. Those differentials shrank rapidly after unification. The

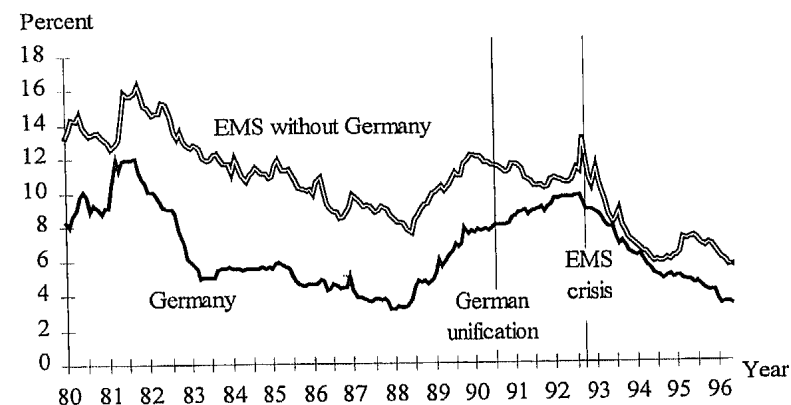


Figure 2.6. Daily interest rates: Germany vs. EMS. The broken curve shows the weighted daily interest rates of the EMS countries without Germany. Weights are based on 1980 GDP figures. EMS countries include Austria, Belgium, Denmark, Spain, France, Italy, Ireland, The Netherlands, Portugal, and the United Kingdom. Because of lack of data, some country series start later than 1980. Weights have been adjusted accordingly. Sources: Bundesbank, *Monatsberichte* (various issues), Frankfurt/Main, Table IV.4; letter from Bundesbank of July 11, 1996; OECD, *National Accounts*, Paris, 1996, Table 3, p. 158; own calculations.

high demand for funds in the German capital market that resulted from the boom brought about by unification produced a textbook-like response by the interest rates.

The interest response was not limited to short-term rates or to European currencies. Figure 2.7 shows the development of German long-term rates compared with long-term rates in the United States and in western Europe's largest countries. The picture is always the same: Unification pulled the traditionally low German interest rates upward against the rates in other countries. The figure shows that German and U.S. interest rates in particular have coincided closely since unification. For the 1980s, the unusual circumstances in the United States explain an American interest lead of more than 200 base points. In the 1990s, the unusual circumstances in Germany and the United States have balanced out, and their long-term interest rates are more or less the same.

There is only one important exception to the general trend of shrinking interest differentials – the EMS crisis itself. In the second half of 1992, various European central banks made desperate attempts to defend their



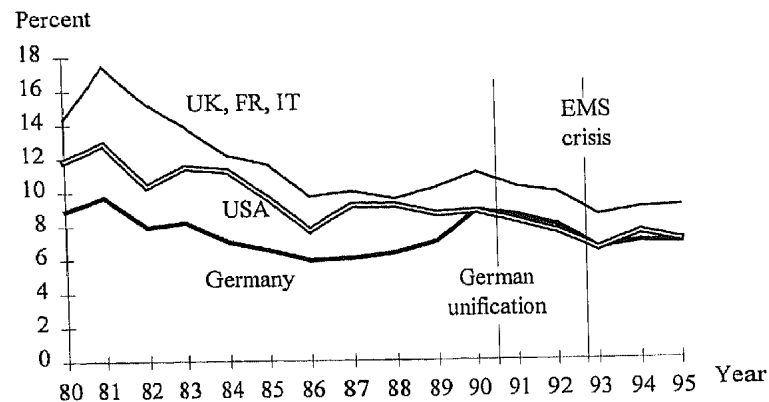


Figure 2.7. Long-term interest rates. The series UK, FR, IT is the unweighted mean of the respective country interest rates. Source: OECD, *Main Economic Indicators* (various issues), Paris.

currencies against devaluations by artificially increasing their short-term interest rates. Figure 2.8 shows this for Sweden and Ireland. Sweden was not a member of the EMS, but had unilaterally tried to peg its krona to the EMS currencies. Ireland was a member. In both countries the daily interest rates were pushed to astronomical heights. Because Figure 2.8 shows the monthly averages of the daily interest rates, it understates the actual development. On September 17 the Swedish discount rate was 500%.

The temporary increase in short-term interest rates was an exception to the post-unification trend, and it indicates how strong the market forces must have been. Both Sweden and Ireland lost the game. Like so many other currencies, their currencies were devalued relative to the deutsche mark.

The crisis in the EMS reached a climax on "Black Wednesday," September 16, 1992. On that day the membership of the British pound in the EMS was temporarily suspended, and the lira followed the next day. A period of successive devaluations of various currencies against the deutsche mark began, and in the end both the United Kingdom and Italy were forced to leave the system. Sweden and Norway gave up their attempts to maintain fixed exchange rates with the EMS currencies.

The successive devaluations added up to a substantial revaluation of the deutsche mark. Figure 2.9 demonstrates the revaluation effect by

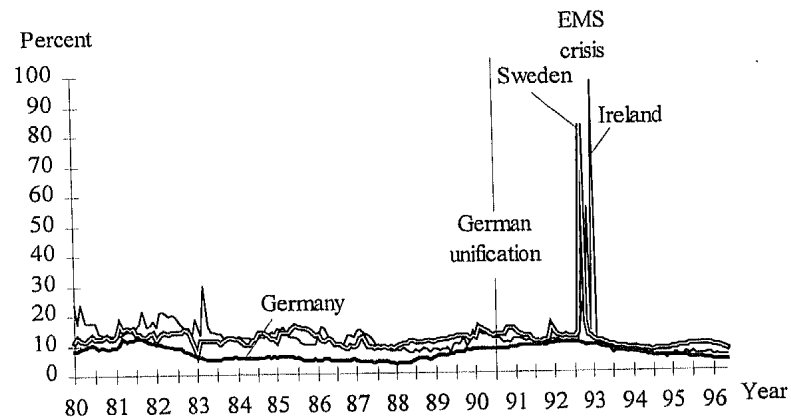


Figure 2.8. Desperate attempts to defend the exchange rate. All rates are monthly averages of daily interest rates. Sources: Bundesbank, *Monatsberichte* (various issues), Frankfurt/Main, Table IV.4; letter from Bundesbank of July 11, 1996.

comparing the trade-weighted exchange value of the deutsche mark with its trade-weighted purchasing-power parity (PPP), as measured by the Organization for Economic Cooperation and Development (OECD). The abscissa of the diagram shows the ratio of these two values. A value of unity indicates an exchange rate equal to the OECD PPP. The data refer to 14 countries that together account for two-thirds of Germany's foreign trade,<sup>9</sup> and they include all countries that are or were members of the EMS. With regard to the EMS countries, the revaluation of the deutsche mark between January 1992 and April 1995 was 20% in real terms. The respective revaluation figure for all countries that were considered was about 16%.

These figures are significantly smaller than the respective figures for the revaluation of the dollar in the 1980s, which in trade-weighted real terms was about 50%,<sup>10</sup> but they are nevertheless large if one takes into account the fact that the German economy is much more integrated into the world economy and is less self-sustaining than the U.S. economy. In the 1980s the export share in the U.S. GDP was about 9%, whereas

<sup>9</sup> The rest are as follows: developing countries, including OPEC, 13%; transition countries, including China, 10.5%; Switzerland, 5%; others, 6.5%.

<sup>10</sup> See Sinn (1988, p. 39), where a diagram with unpublished International Monetary Fund (IMF) data is shown.

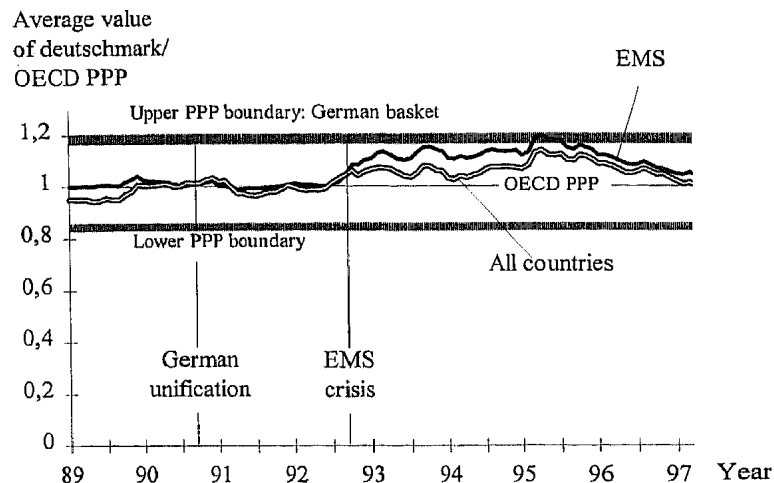


Figure 2.9. Real value of the deutsche mark: 14 countries. The EMS series is constructed as the weighted average of the ratios of exchange rates and OECD PPPs of EMS countries. Exchange rates are monthly, and PPPs are annual data. Both indicate the value of a deutsche mark (i.e., they use the respective foreign currency as the numeraire). Weights are based on 1989 trade flows following the external-value concept of the Bundesbank. EMS countries include Austria, Belgium, Denmark, Spain, France, Italy, Ireland, The Netherlands, Portugal, and the United Kingdom. "All countries" are EMS countries plus Finland, Sweden, Japan, and the United States. A series takes the value 1 if the weighted average of the exchange rates equals the weighted average of the OECD PPPs. The higher limit of the upper boundary gives the weighted mean of the PPPs based on the German basket relative to the PPP according to the OECD basket for all countries. The lower limit of the upper boundary gives the respective PPP value for the EMS countries. As a rule, German-basket PPPs are above OECD-basket PPPs. The limits of the lower boundary are the inverses of the respective limits of the upper boundary. Sources: OECD, *Main Economic Indicators*, Paris, 1996, p. 201; OECD, *National Accounts*, Paris 1996, table 3, p. 158; Statistisches Bundesamt, *Statistisches Jahrbuch für das Ausland*, Wiesbaden 1995, Table 16.3, pp. 342–3; letter by Bundesbank of July 11, 1996; Bundesbank, *Monatsbericht*, April 1989, Frankfurt/Main, p. 46; own calculations.

Germany's current export share is 21.2%. Even a 16% revaluation for the deutsche mark is a dramatic amount that severely threatens the competitiveness of the German economy. In 1969, a furious debate about a revaluation by 8.5% preceded the collapse of a German government.

## 5 Alternative Explanations for the Currency Crisis

The unification shock seems an obvious explanation for the EMS crisis and the subsequent revaluation of the deutsche mark. However, there are other possible explanations, and this section will briefly screen them.

A popular explanation favored by many German politicians sees the revaluation of the deutsche mark as proof of Germany's strength, of the soundness of its economic policy, and of the confidence of international investors.<sup>11</sup> That explanation is wishful thinking. It may describe investors' expectations about what other investors believe, but it certainly does not describe the economic fundamentals underlying those expectations. German economic policy after unification has not been sound. It has failed to prevent disastrous wage increases, and with massive subsidies of a size previously unknown in the history of industrialized nations it has created nothing more than a straw fire in the east. The jump in the German debt ratio and the failure to satisfy the Maastricht criterion do not provide a basis for confidence in the strength of the German economy or in German economic policy.

If the interpretation advanced in this study is correct, it was the weakness, not the strength, of the German economy that created the currency crisis and forced the revaluation of the deutsche mark. The high capital demand, particularly by the public sector, raised German interest rates, which in turn attracted foreign capital and thus induced the revaluation. If there had been a less destructive policy for eastern Germany, the German resource demand, interest level, and exchange rate would all have been lower.

Another possible explanation for the revaluation often advanced in Germany refers to the apparently low German inflation rate. The excess of foreign inflation over German inflation, so the argument goes, built up a revaluation potential for the deutsche mark and created the pressure that led to the breakdown of the EMS in 1992.<sup>12</sup> That argument likewise is not convincing. Why it is not convincing is obvious from Figure 2.9, which shows that before the EMS crisis the value of the deutsche mark was approximately equal to the OECD PPP, and there was no

<sup>11</sup> According to the Bundesbank (*Geschäftsbericht*, 1992, Frankfurt/Main, p. 82), the "true reason" for the breakdown of the EMS was the "failure to correct the exchange rates according to the accumulating differences in the development of prices, costs, budget deficits, and current accounts" (my translation).

<sup>12</sup> See the foregoing quotation. For a similar line of reasoning, compare Eichengreen and Wyplosz (1993, p. 64).

apparent tendency for that value to fall below the OECD PPP, which might perhaps have justified a revaluation.<sup>13</sup>

A major reason for that was the “franc-fort” policy of the French central bank, which had in fact implied that for some years the French inflation rate had been lower than the German rate. Because France is Germany’s most important trading partner, the franc-fort policy explains a substantial part of the flat trend of the real exchange value of the deutsche mark before the currency crisis.

Admittedly, the OECD PPP is not the only basis for making a judgment about a revaluation potential. The horizontal upper boundary in Figure 2.9 indicates the PPP value for the German consumption basket published by the Statistisches Bundesamt. Judged by the German-basket PPP, there was indeed a revaluation potential that might explain the EMS crisis. However, there are at least two counterarguments to that interpretation. One is that in early 1995 the value of the deutsche mark in terms of the EMS currencies went even beyond the German-basket PPP value. This indicates an additional cause for a revaluation.

The second counterargument denies the validity of a PPP comparison based on only one country’s currency basket. In general, the PPP value of a currency is high when it is calculated on the basis of that country’s basket of commodities, because commodities that are cheap there have a high weight. This is simply a result of the relative-price effect. If the lira is evaluated on the basis of the American consumption of gasoline, its purchasing-power value is low, but so is the value of the dollar if it is evaluated on the basis of Italian wine consumption. Thus, if the baskets of other countries are chosen, then, in general, a rather low PPP value of the deutsche mark should be found. Statistical information about the United Kingdom and Sweden (reported later in Figure 2.11) confirms this. Thus a comparison based on the OECD basket, which is an average of the various country baskets, seems best suited for a judgment, and this comparison lends no support for the “undervaluation thesis.”<sup>14</sup>

<sup>13</sup> Even if the exchange rate had fallen relative to the PPP, that would not necessarily have indicated a revaluation potential, because it could have resulted simply from the Balassa effect. With the integration of poor eastern Germans in the German economy, the price level of nontraded goods has fallen, and hence an appropriately calculated PPP value should have risen after unification, which is the same as saying that the exchange rate should have fallen relative to the OECD PPP. The fact that such obviously was not the case (Figure 2.9) strengthens the argument put forward here that the deutsche mark was not undervalued before the crisis.

<sup>14</sup> Unfortunately, only information about the PPPs based on the OECD and German baskets is available for all countries. So the lower PPP boundary that would result from using Germany’s trading partners’ baskets is unknown. However, in a symmetrical situ-

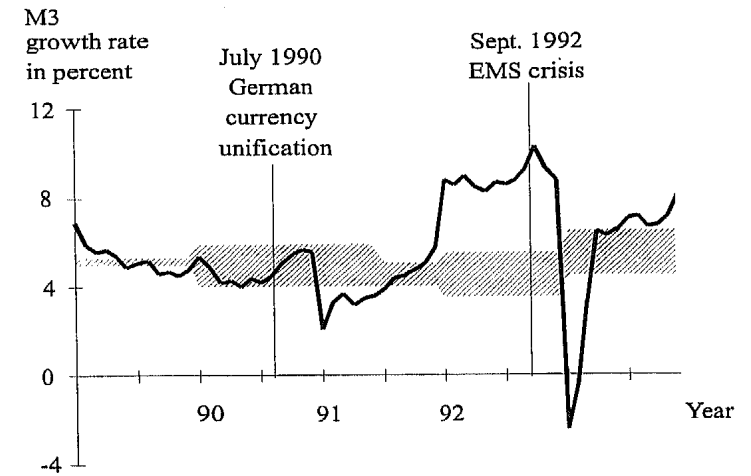


Figure 2.10. Did the Bundesbank cause the EMS crisis? The growth targets are announced by the Bundesbank on an annual basis. After 1990, a growth zone instead of a single target rate was announced. The target variable is M3. Following the Bundesbank’s methodology, the actual growth rates are monthly changes of M3 as compared with the average stock in the last quarter of the previous year translated into annualized rates. Sources: Bundesbank, *Geschäftsbericht* 1995, Frankfurt/Main, p. 79; Bundesbank, *Saisonbereinigte Wirtschaftszahlen – Beihefte zum Monatsbericht*, April 1993, 1995, Frankfurt/Main, Table I.1, p. 6.

A third possible explanation for the EMS crisis that competes with the one argued for here refers to the Bundesbank’s monetary policy during the time before the crisis (De Grauwe, 1994, p. 152). The Bundesbank has been severely criticized for a too-restrictive monetary policy before Black Wednesday. That argument is that it had put German price stability above the survival of the EMS and had artificially created the demand for deutsche marks in the foreign-exchange markets by reducing the money supply and boosting German interest rates. That argument reflects the anger of the other central banks when faced with the floods of capital leaving their countries, but it is false. Figure 2.10 shows that the Bundesbank did not carry out a contractionary policy; on the contrary, it tried to provide liquidity to the German banking system so as to keep the German interest rates down.

ation, its relative distance to the OECD PPP should be the same as that of the PPP based on the German basket. The “Lower PPP boundary” illustrated in Figure 2.9 reflects this assumption.

From the end of 1991, and right through the crisis, the actual growth rate of M3 exceeded by more than 4 percentage points the target zones that the Bundesbank had originally announced, and only after the crisis, in late spring 1993, did the Bundesbank make an attempt to correct the excessive growth of the money supply. To read anything into Figure 2.10 that could be interpreted as a criticism of the Bundesbank would be courageous, to say the least.

The only possible explanation for the EMS crisis that, in my opinion, merits confidence is the speculative-attack theory advanced by Eichengreen and Wyplosz (1993). According to this theory, pegged exchange rates like those in the EMS invite speculative attacks by investors, because there is nothing to lose if an attack fails, but much to gain if it succeeds. Pegged exchange rates are inherently unstable. The incentive to buy a currency is higher the greater the number of speculators who have already made the decision to buy, because the more people buy, the larger the probability that the central banks will be unable to defend the exchange rate.

Although their theory is an important part of the mosaic that contributes to a picture of what has happened, it cannot explain why a speculative attack begins and the direction such an attack takes. It is a theory that explains the amplification of an existing shock, and nothing more. The view that the unification of Germany caused the currency crisis harmonizes very well with this theory.

## 6 Implications for the Maastricht Treaty

On January 1, 1999, the Bundesbank will have lost its sovereignty, and the deutsche mark will no longer be a separate currency – it will be only a subunit of the “euro,” just as a pfennig is a subunit of the deutsche mark. By the end of 2001, deutsche-mark coins and banknotes will have disappeared. The destinies of the other currencies joining the EMS will be similar, but precisely which currencies will be affected cannot be known at the time of this writing. France, Austria, The Netherlands, and Luxembourg will definitely be members. The rest is unclear. However, in all likelihood Germany and France will not be able to exclude many of the other countries that violate the Maastricht criteria even if they want to, because Germany and France themselves do not meet those criteria. In nearly all cases it will be necessary to stretch article 104c of the Treaty of Maastricht to make membership possible.

It seemed for a long time that the problem with the treaty would be that Germany's unification shock will not have been fully absorbed when

the exchange rates are irrevocably fixed in 1998.<sup>15</sup> The fear was that the exchange rates would be frozen at a level that would be appropriate for the current need to pump economic resources into Germany, but not appropriate for a more normal future, when eastern Germany has recovered and Germany's thirst has been quenched.<sup>16</sup> Under the European Monetary Union (EMU), adjustments of the exchange rates can occur in real terms only through diverging inflation rates or diverging deflation rates. Thus either a deflation in Germany or an inflation in other European countries would be necessary to balance the trade flows, neither of which would be compatible with the goals of the EMU.

Fortunately, however, the situation has eased substantially in the meantime. Figure 2.9 shows that in the period from the first quarter of 1995 through the first quarter of 1997, exchange rates came down substantially. With regard to all of Germany's trading partners, the trade-weighted real exchange rate of the deutsche mark has returned to the OECD PPP value, and with regard to the EMS countries only a slight overvaluation of 4% remained by April 1997, the time this study was last updated. The reasons for this include the appreciation of the lira in 1996 and the strong appreciations of the dollar and the pound in the first quarter of 1997.

It is true that despite this exchange-rate adjustment, potential danger remains insofar as the accumulation of foreign debt due to the public transfers to eastern Germany will result in an increase in the flow of interest payments to (or a reduction in the flow from) foreigners. This increase will have to be financed with a trade surplus, which in turn will require an undervaluation. However, this is a second-order effect that is likely to wash out over a long period of time. It seems likely that the necessary undervaluation can easily be achieved with only a slight inflation differential between Germany and its trading partners, and this should not be a matter of major concern.<sup>17</sup>

<sup>15</sup> Indeed, that was so when the first version of this study was presented in the summer of 1996 in Tel Aviv.

<sup>16</sup> An economic model that predicts the rise and fall of the deutsche mark's value has been provided by Adams, Alexander, and Gagnon (1993). However, because of its Ricardian nature, that model abstracts fully from the effects of the increased public deficit that explains more than two-thirds of eastern Germany's excess absorption (cf. Figure 2.1).

<sup>17</sup> Wyplosz (1991) used a similar kind of argument to demonstrate that German unification would result in a depreciation of the deutsche mark right from the beginning. National investors, so his argument went, would know the long-run equilibrium of the exchange rate and would therefore anticipate that value in the current exchange rate. The revaluation of the deutsche mark has proved that argument wrong. Obviously, financial investors are not as farsighted as Wyplosz assumed.

A more important concern is the question whether all the country-specific exchange rates have returned to their long-run equilibrium values or whether it is only Germany's average exchange rate that has become normalized. An answer is given in Figure 2.11, which breaks up the country-specific information that was used to calculate the aggregate EMS exchange rate depicted in Figure 2.9. Figure 2.11 shows time paths for the actual market exchange rate, the OECD PPP, the PPP according to the German basket, and, if available, the PPP based on the respective foreign baskets. To allow a plausible judgment to be made, it will be assumed that an exchange rate is acceptable for entry into the EMU if it is within the PPP bounds, where the upper bound is defined by the German baskets, the lower bound by the respective foreign baskets, and the middle by the OECD basket.

Obviously, there is no problem with Austria and Belgium. The exchange rates have been stable and lie in the neighborhood of either the German PPP or the OECD PPP, which are anyway close to one another.

The Danish exchange rate has been stable, but is below the German PPP and the OECD PPP. The krone seems to be slightly overvalued, judged by the OECD PPP criterion, but if a PPP based on the Danish basket were available, it is likely that the krone would still be within the PPP bounds.

The Finnish markka was strongly overvalued before the EMS crisis. After some initial overshooting of the exchange rate, its value is now in the neighborhood of the OECD PPP. Sometimes the volatility of the markka is seen as an indication that Finland may not yet be suitable for the union. However, in light of Figure 2.11, that interpretation would seem completely wrong, because the "volatility" was in fact a one-step adjustment that corrected the previous overvaluation. There can be little doubt that Finland is well suited to join the EMU.

The value of the Irish pound seemed correct before the EMS crisis, but since then it has moved farther away from the OECD PPP, even leaving the PPP bounds. By now, however, the deviation has been partly corrected, and the exchange rate is again below the German PPP. It seems that Ireland can join the currency union even though some further revaluation might be useful before membership becomes effective.

A revaluation will definitely be necessary for the lira. The lira was strongly devalued during the currency crisis, and even more so in 1995, when a political crisis was added. In the meantime the devaluation has been partly reversed, and the lira was even able to return to the EMS by the end of 1996. However, despite that, the lira has remained outside the PPP bounds. In order to satisfy the German PPP, the deutsche mark

would have to cost about 880 lire, but to satisfy the OECD PPP only 750 lire. In fact, however, it costs about 1,000 lire. Until the undervaluation of the lira is corrected, the lira will have difficulties in participating in the currency union.

France and The Netherlands face no problems whatsoever. Both exchange rates have been stable, and both have been close to the respective PPPs. If anything, the franc is slightly undervalued. However, the margins are so small that it is clear that France and The Netherlands can safely join a currency union.

That may not be so for Portugal and Spain. The escudo was undervalued both before and after the currency crisis. During the crisis its value was within the PPP bounds, and only recently has it touched the German PPP value again, which, however, is a long way from the OECD PPP. The peseta was within the bounds before the crisis, but after the crisis its value collapsed like that of the Italian lira, and it has stayed outside the bounds ever since. Whereas the escudo's chronic undervaluation may partly be attributed to the Balassa effect, the values of the peseta and the lira deviate too much for such an explanation to make sense. After all, the two countries are well developed. There rather seems to be an idiosyncratic Mediterranean deviation from the respective PPPs, which makes it more than doubtful that these currencies can be integrated into the currency union without a substantial realignment.

The Swedish picture is reminiscent of that for Finland: Before the crisis the krona was overvalued, but now its value seems right. The exchange rate approximates the OECD PPP, and currently it just equals the Swedish-basket PPP, which itself is very close to the OECD basket. Sweden, too, could join the EMU at the current exchange rate, notwithstanding the fact that Sweden has declared that it will stay outside the system for the time being.

For a long time the United Kingdom was a major problem for the EMU, because the pound was strongly overvalued after the currency crisis. The recent strong revaluation of the pound has corrected all that. The pound is still undervalued relative to the OECD PPP, but in April 1997 it was clearly within the PPP bounds. Thus there is little doubt that the United Kingdom could join the EMU at the going exchange rate if it wished to do so.

To summarize this section, it seems that the German-unification shock has been overcome just in time for the EMU to begin. Most of the countries considered can join the EMU without problems. Only Italy and Spain, and to a limited extent Portugal, raise some doubts. If judged by the PPP criterion, their currencies need devaluations before they can be exchanged for the euro. These devaluations would then be able to correct

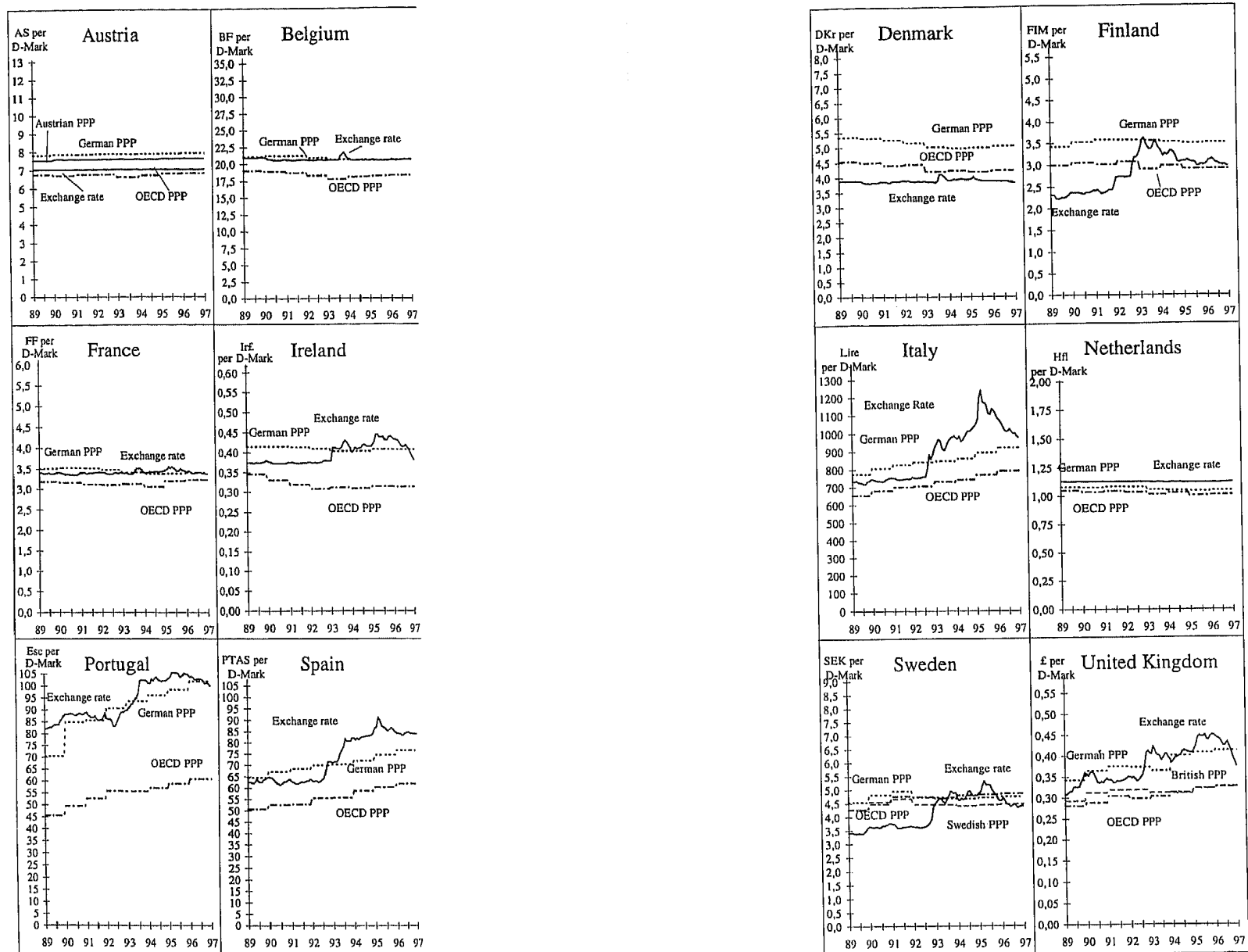


Figure 2.11. Exchange rates and PPPs: a comparison for 12 countries. The exchange rates (monthly) and the PPPs (annually) are defined as the value of a deutsche mark in terms of the respective foreign currency (i.e., a higher rate implicates a stronger deutsche mark). The "German PPP" is based on the German basket, and the "OECD PPP" on the OECD basket. Specific country PPPs are based on the respective

Caption to Figure 2.11 (cont.) national baskets. Sources: OECD, *Main Economic Indicators*, Paris, 1996, p. 201; OECD, *National Accounts*, Paris, 1996, table 3, p. 158. Statistisches Bundesamt, *Statistisches Jahrbuch für das Ausland*, Wiesbaden, 1995, table 16.3, pp. 342-3; letter from Bundesbank of July 11, 1996; own calculations.

the 4% overvaluation of the deutsche mark with regard to all EMS currencies that, as Figure 2.9 showed, persisted in early 1997.

## 7 The German Currency Union as a Warning for Europe?

Karl Otto Pöhl, the former president of the Bundesbank, warned the European Parliament not to agree to a currency union, because that would be a "disaster" as, in his opinion, the German currency union was.<sup>18</sup> Pöhl was right about the German currency union, but wrong about the European one. The similarity between the two currency unions is very limited.

A major reason that the German currency union turned out to be disastrous for eastern German industry was that it was combined with a real revaluation of the eastern German price level by 340%. Because all prices and wages were fixed in numerical terms (while debt contracts were cut in half), eastern German products became 4.4 times more expensive for western German buyers than before the currency union.

Before unification, a big hole in the iron curtain always existed for the purpose of active intra-German trade. That trade took place at special prices that were equivalent to an exchange rate between ostmarks (East Germany) and deutsche marks (West Germany) of 4.3:1. The East German economy had been competitive at that rate, delivering many commodities to the West German market through West Germany's trade chains. The currency unification simply equated one ostmark to one deutsche mark, thus destroying eastern Germany's competitiveness overnight.

The currency union not only destroyed eastern German industry but also turned out to be a major obstacle to subsequent recovery because it paved the way for additional wage increases. The unification made it possible for western German trade unions and western German employers' associations to open offices in the east and to negotiate eastern German wages. Because both parties were more interested in the safety of western German workplaces than in a quick recovery for eastern German industry, they were happy to agree to overly generous wage contracts for their eastern German competitors that implied full equalization of union wages by 1996. The currency union and the subsequent proxy negotiations for eastern German firms had the effect of a 10-fold increase in eastern German wages in terms of deutsche marks. East

<sup>18</sup> In a speech delivered to the economic and monetary section of the European Parliament, January 7, 1991.

German wages used to be 7% of West German wages (in terms of deutsche marks); now they are about 70%. They would be even higher if many eastern German firms and workers had not in the meantime rejected the wage decree of their western colleagues, as indeed they have.

Fortunately, none of these effects will endanger a European currency union. The exchange rates are basically correct now, and there is no risk that successive wage negotiations will create an unemployment problem. There will be no way German trade unions could enforce their wages on Portuguese workers after a European currency union is created. Each country will retain its own sovereignty. Proxy negotiations of the German type are unthinkable in the European context.

## 8 Conclusions

The German-unification shock created substantial difficulties for Germany's trading partners and triggered the crisis of the EMS. For a while, a large number of currencies were undervalued relative to a long-run equilibrium that presumably lies in the neighborhood of PPP values. However, recent revaluations have largely eliminated those deviations. Judged by various PPP criteria, only the Mediterranean currencies seem to need modest revaluations before they can join without exporting deflationary pressures to the other member countries.

Thus, in contrast to the time when the first version of this study was written (early 1996), the way toward a European currency unification seems to be open. Horrors of the type created by Germany's internal currency unification do not have to be feared, because European currency unification will not be accompanied by realignment shocks or cross-border wage dictates. The European economies are ready for the euro.

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